ABSTRACT

TITLE OF THE SPEECH

Game-based guidance: A simulation of mGBL - mobile Game Based Learning

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SHORT AUTHOR(S) PROFILE

Thomas Putz is responsible for the initiation, the application and the coordination of national and international projects at evolaris and acts as the contact point with funding organizations. He has been involved as coordinator and as specialist in eLearning and mLeanring in many projects since 1995 funded under Adapt (e.g. EuroComp), Leonardo da Vinci (e.g. Develop), Sokrates Grundtvig 1&2(e.g. FATE, EufoSafe, Improva), Sokrates Minerva (e.g. ABE-Campus), EQUAL and proofed his competences in the field of eLearning as General Manager of the e-bfi telelearning GmbH in Austria.

ABSTRACT

The project mobile Game Based Learning (mGBL) coordinated by the initiator of the evolaris next level Privatstiftung and chairman of the board Univ. Prof. Otto Petrovic

- has been implemented from October 2005 until December 2008,
- has been conducted by 30 researchers from 11 project partners from 5 European countries (Great Britain, Italy, Croatia, Austria and Slovenia),
- used nearly 600 person-moths resources with a budget of 2.5 Mio EUR,
- was supported by the EU under the FP6 IST.

The overall goal of the project was to improve the effectiveness and efficiency of learning in the target group of young people (aged 16 – 24) through the development of innovative learning models based on mobile games. The biggest challenge in this project was to communicate content from different fields in a motivational, inclusive and emotional way. As the most personal and emotional communication channel the mobile phone was used to establish the link between learners and teachers.

The specific aim of the project was to design, develop and pilot a prototype game platform that might be used to efficiently develop games for m-learning. The basic idea is to use the mobile phone to implement games bridging the real and virtual world. These games are firstly intended to directly support learning via opportunities to develop knowledge and cognitive skills in an exciting and inspiring – and hence in a highly

emotional – way, and secondly to indirectly motivate users to refer to other media (e.g. "classic" libraries, scripts, etc.) for learning purposes.

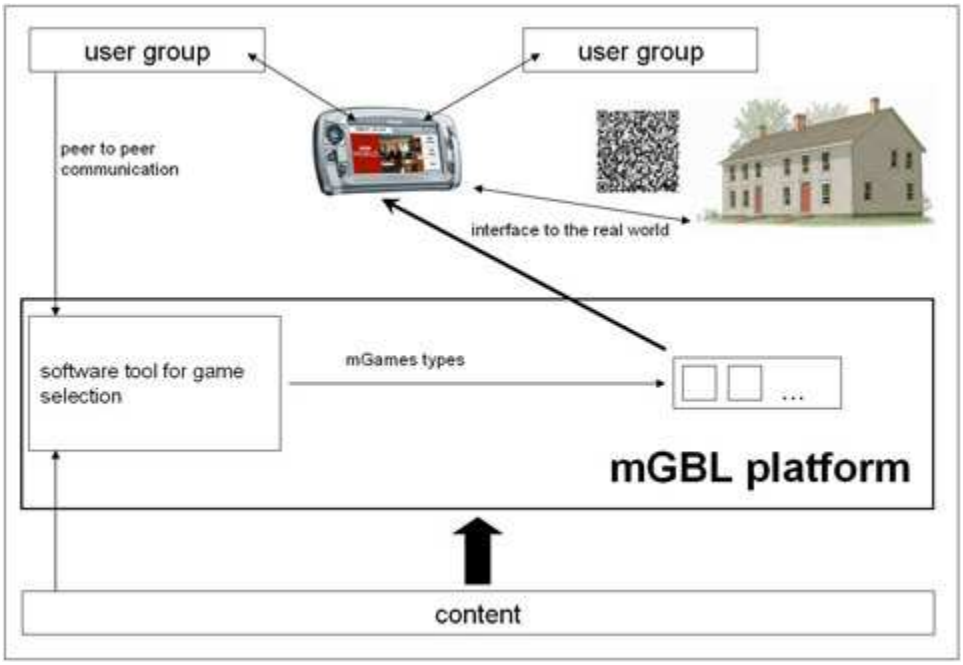

Fig1: mGBL platform

The mGBL platform is the core result of the mGBL project. This software platform enables the cost effective development of mobile learning games, the planning, the deployment, the management, the reporting as well as the control of those games for m-learning.

Research findings regarding pedagogical concepts, learning models and game models brought up a classification of mobile games and their applicability to different learning situations depending on target group, content and learning goals. The project team developed a software tool for supporting the selection of m-learning games based on this classification. All subsequent developments of software modules in the mGBL project are based on these research findings.

The mGBL platform is a comprehensive integration system for game-based learning. It supports the full cycle of mobile game-based learning from the selection of games and game styles to game authoring with the definition of learning content right through to the practical administration of game play and its results. Individual mobile game software is replaced by an integrative approach to mobile learning. Different server- and client-side state-of-the-art technologies are utilised according to the needs of different game concepts and user preferences. This has been shown in practice to be very important for acceptance and learning success. The administrative web user interface with its unique built-in interaction modelling system allows users with limited technical expertise to manage games and game players.

A state-of-the-art three-tier server application has been created which supports all user administration and game management needs. Security and data consistency are adequate to serve a large number of clients independently. The application can be accessed via a web interface for configuration and management of data handled by the platform with the help of extensive reporting and logging support.

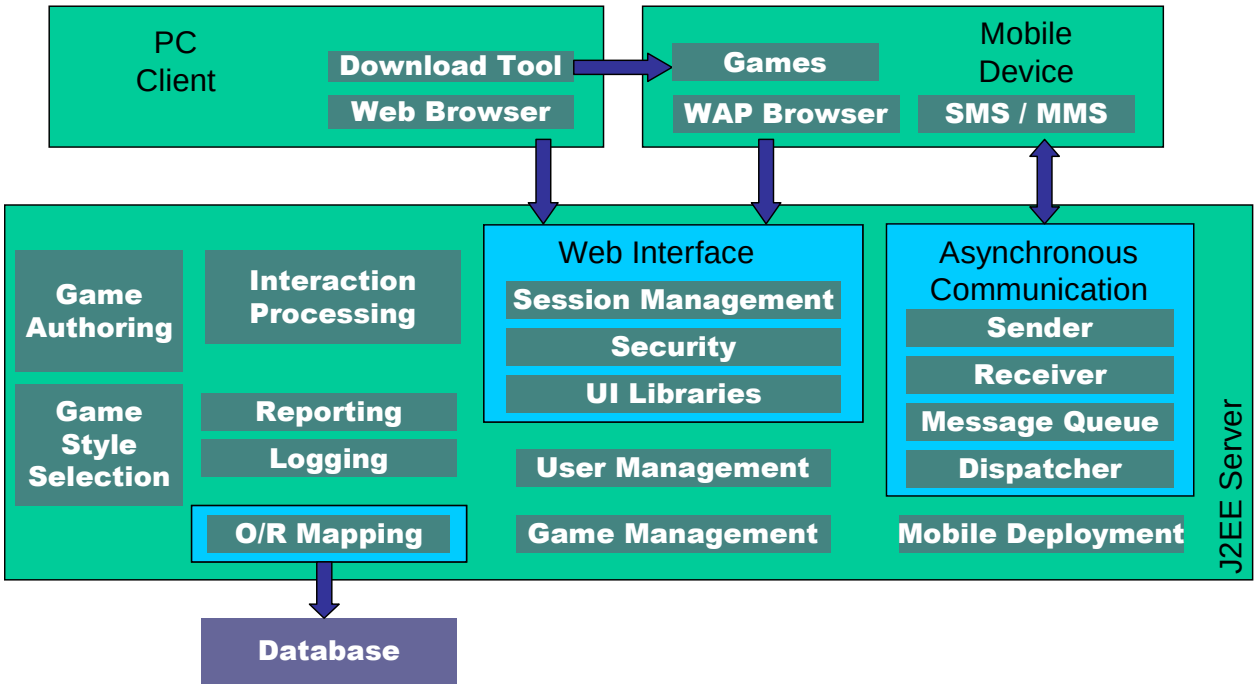

Fig2: Architecture of the mGBL platform

In addition to these fairly conventional features, the platform facilitates flexibility and communication. The rich diversity of mobile game types requires high configurability and connectivity. Therefore, the platform has been designed to be not just a monolithic application providing a fixed set of features, but to be modular and, to a high degree, extendable. An innovative game modelling system is available in the platform administrative user interface for handling incoming and outgoing SMSs, MMSs and e-mail messages and for responding in ways that suit the needs of diverse game types, including all-pervasive games. Web interfaces for interactive message sending and blogging are provided in order to further support communication between teachers and game participants.

Most parts of the software modules are available as open source code with the EUPL 1.0 license.

The mGBL project delivered 3 different mobile game templates:

Hybrid quiz simulation game template: **"Ahead of the Game"**

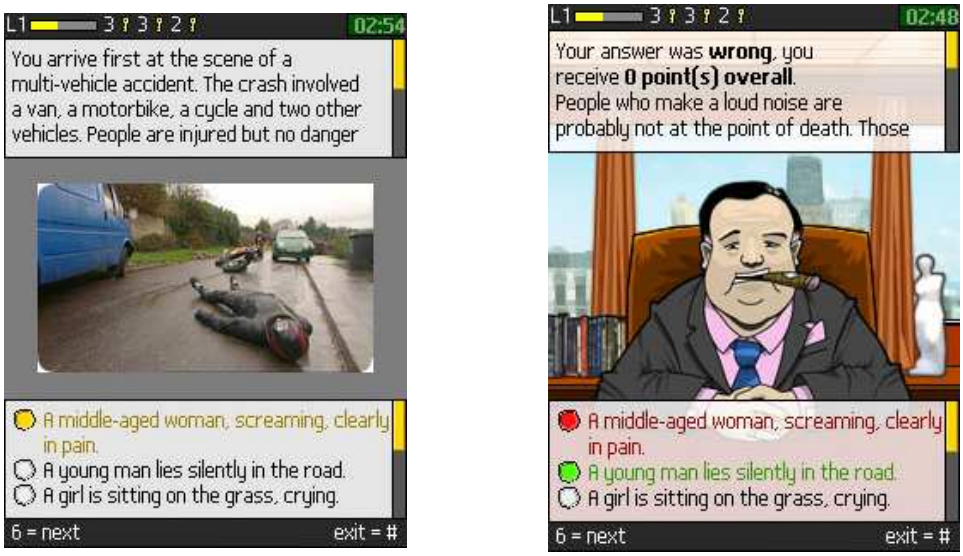

Fig3: Screenshot of "Ahead of the Game": Fastest First – quiz component

Fig4: Screenshot of "Ahead of the Game: Crisis!"

Board game template: **"Mogabal"**

Fig5: Screenshot of "Mogabal"

Pervasive game template: **"Get Real!"**

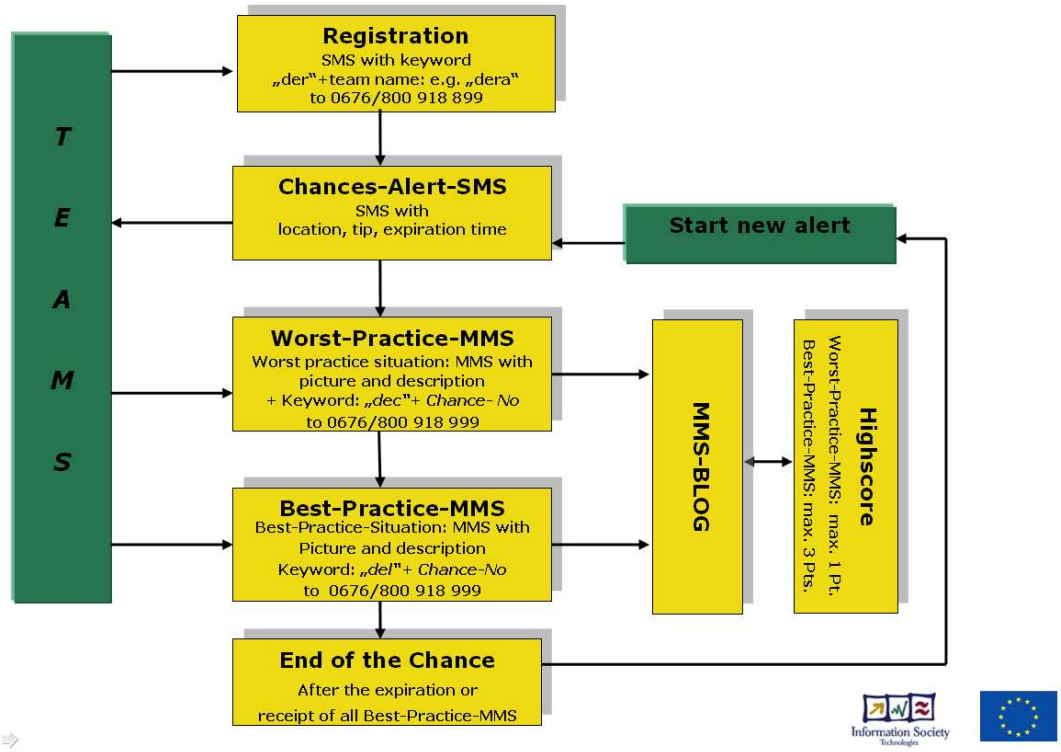

Fig6: Gameplay "Get Real"

In general, all students liked the games and also the mGBL platform. All indicators show that students like to use the games in a real tertiary education environment. Some of the students requested usage of the resource

in other university courses. Overall, the students were very enthusiastic about using the game Mogabal for their final course exams. Many of them pointed out the efficiency, flexibility and ease of use of the platform. The new experience, fun and playability of the games gave them additional motivation. More than half of the students stressed that they learned more by playing the games, paid more attention while playing the games, and were more engaged when using the "learning by playing" method.

All of the professors who participated in the trial would like to use the games for their learning purposes. All of them are of the opinion that games could provide added value for their learning purposes.

The mGBL games were complex in terms of the pedagogy and organisation involved. Despite this, from the analysis which we performed it is clear that both teachers and students found them to be challenging and enjoyable experiences. Most important of all, there is clear evidence that significant learning took place and at least some of that learning was retained.

The mGBL project has proven that it is not always necessary to deploy the most advanced 3D graphics and cutting-edge handsets in order to ensure a good user experience. In contrast, a practical "low tech – high involvement" approach is in many cases much more suitable in the learning context, especially when considering younger people in formal education. It is of utmost importance that the systems can be used by all pupils and students and that it does not require special devices, which may not be available or affordable for some target groups.

FOR ADDITIONAL INFO

www.mg-bl.com

http://mgbl.sourceforge.net/

www.evolaris.net